

2008 Annual Inspection Report for the Grand Junction, Colorado, Site

Summary

The Grand Junction, Colorado, Site, inspected on February 28, 2008, was in excellent condition. Physical and institutional controls enacted at the site continue to be effective in preventing exposure to contamination remaining on the property. Groundwater and surface water monitoring results will be included in a data validation report. No cause for a follow-up inspection was identified.

1.0 Introduction

This report presents the results of the annual U.S. Department of Energy (DOE) inspection of the Grand Junction, Colorado, Site. R. Johnson (Inspector) of S.M. Stoller Corporation, the DOE Office of Legacy Management (LM) contractor at Grand Junction, Colorado, conducted the inspection on February 28, 2008. The inspection was conducted in accordance with the *Long-Term Surveillance and Maintenance [LTS&M] Plan for the Grand Junction, Colorado, Site* (June 2006).

The site was contaminated during uranium milling and uranium oxide procurement activities conducted by the federal government between 1943 and 1974. DOE remediated the property between 1986 and 2001. Remediation consisted of decontaminating or demolishing contaminated buildings and removing contaminated soil. Contaminated materials were disposed of at the Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Grand Junction Disposal Site located south of Grand Junction, Colorado. Some contaminated materials were left in place until they can be remediated efficiently under a state-approved covenant for deferred remediation.

DOE transferred approximately 8 acres of the site in 2001 to the U.S. Department of the Army (occupied by an engineering unit of the U.S. Army Reserve). The remainder of the facility was transferred to nonfederal ownership (Riverview Technology Corporation) in 2001, following approval of the covenant for deferred remediation. Several buildings are leased by DOE from the Riverview Technology Corporation to conduct ongoing DOE operations.

DOE remains responsible for ensuring that contamination left on its former property is controlled to prevent exposure to the public and the environment. Contamination remains in three occurrences:

- In a buried concrete slab and underlying soil beneath the south portion of Building 12 (known as Building 12A).
- In groundwater and surface water within the site perimeter.
- As radium foil sealed below ground in a decommissioned calibration borehole.

The site transfer agreement between DOE and the Riverview Technology Corporation stipulates that contamination beneath Building 12A (site computer facility) and Building 20 (analytical

chemistry laboratory) will be remediated when DOE vacates those buildings and they are demolished. DOE continues to use Building 12A as a computer facility. DOE concluded operations in the laboratory in December 2003, and demolition of the building and remediation of underlying contaminated materials occurred in 2006. The groundwater and surface water is being passively remediated by the process of natural flushing of the alluvial aquifer. DOE will provide stewardship oversight of the decommissioned calibration borehole in perpetuity.

The purposes of the annual inspection are to confirm the integrity of visible features at the site, to identify changes in conditions that may affect site protectiveness, and to determine the need, if any, for maintenance, additional inspections, or monitoring.

2.0 Institutional Controls

Institutional controls at the site consist of warning signs around the surface water locations (North Pond, South Pond, and wetlands) to prevent use, an information/warning plaque over the decommissioned borehole containing radium foil, locks on the groundwater monitor wells, and deed restrictions that prohibit unauthorized excavations that could expose contaminated groundwater under the former DOE facility or materials under Building 12A. Verification of these institutional controls is part of the annual inspection, and the results are included in this report.

3.0 Inspection Results

The annual inspection addresses only those portions of the site that must be monitored and maintained to ensure continued protection of human health and the environment. Those portions are related to contaminated media that remain at the site. Features discussed in this report are shown on the attached drawing. Photographs to support specific observations are identified in the text and on the drawing by photograph location (PL) numbers.

3.1 Specific Site Surveillance Features

Monuments—Two monuments exist at or adjacent to the site. A 1/16-section corner monument east of the site is located adjacent to the site access road (B³/₄ Road). This monument was the origin for the site survey coordinate system during remediation. A U.S. Coast and Geodetic Survey monument near the former north gate to the site establishes elevation control for the site. Both monuments were in excellent condition.

Monitor Wells—DOE owns eight monitor wells on the property to monitor the progress of natural flushing of contaminants from the alluvial aquifer. Currently, seven of the wells are sampled annually. Visible portions of all wells were in good condition, and all wells were secure.

Warning Signs—Thirteen warning signs installed on galvanized steel posts are positioned around the surface water areas so the warning will be visible to a person approaching from any direction of reasonable access (PL-1). Dense vegetation or fences block access to portions of the surface water occurrences. All signs were in excellent condition.

Radium Foil Borehole—DOE installed a 300-foot-deep cased borehole in the 1980s to calibrate depth measurement systems on borehole geophysical logging trucks. Two strips of radium-226 foil were placed around the casing at depths of 81 feet (29 picocuries per gram) and 181 feet (3 picocuries per gram). During calibration, the instruments in the trucks would detect the gamma signal from the radium.

The borehole was decommissioned in place in 2000. DOE perforated the casing above and below each strip of foil and pressure-grouted the annulus with Portland cement to seal the foil in place. The borehole was filled with grout, and a metal plaque was mounted in concrete at ground level over the well. The metal plaque with the borehole information and warning engraved into the metal was in excellent condition.

3.2 Transects

To ensure a thorough and efficient inspection, the site was divided into two areas referred to as transects: (1) the area within the former DOE property boundary that is addressed in the LTS&M Plan; and (2) the outlying area.

Within each transect, inspectors examined specific site surveillance features, such as survey markers, warning signs, and monitor wells. The inspector examined each transect for evidence of erosion, excavation, vandalism, or other phenomenon that might indicate a loss of institutional control or diminished protectiveness.

Interior Portions of the Site—This transect includes the portion of Building 12A where contamination remains beneath the building, the surface water areas, and other site surveillance features within the former DOE property boundary.

The interior floor area of Building 12A was inspected. There was no visual evidence of floor penetrations in the affected area since the last inspection. Exterior areas adjacent to the contaminated media under the building have not been disturbed (PL-2 and PL-3). The current site owner controls maintenance activities in the exterior areas near the contaminated soil, and DOE contractor personnel observe these exterior areas during normal working activities. Building 20 was demolished, and the underlying contaminated soils were remediated in 2006. The former building location was seeded with grass, and was in good condition.

The North Pond, South Pond, and wetland areas (PL-4) are surrounded by a fence, which limits casual intrusion. There was no evidence of fishing, trespass, vandalism, or use of the water.

Most of the site surveillance features are in areas not easily accessible by the public due to fencing. The large parking area on U.S. Army property between North Pond and South Pond has been recontoured to facilitate drainage (PL-5) and two new culverts have been installed to drain runoff from the parking area to the adjacent ponds (PL-6). It is unlikely that these activities exposed groundwater. There were no signs of activity, development, or land use change (e.g., well installations or excavations that could expose groundwater) on the site that might degrade protectiveness.

Outlying Area—Private construction consisting of site grading and installation of a trailer house and septic tank are in progress on the adjacent property east of the site (PL-7 and PL-8). The alluvial aquifer apparently is not present under this location. There were no signs of activity, development, or land use change in areas adjacent to the site that might expose contaminated groundwater or impact the natural flushing of the aquifer.

4.0 Groundwater and Surface Water Monitoring

In accordance with the Record of Decision for the site, the contaminated groundwater is being remediated through natural flushing of the alluvial aquifer. This passive remediation is expected to be completed in 50 to 80 years following completion of remediation of contaminated soils (except for the contamination that was left under Buildings 12 and 20, site remediation was completed in 2001). Sampling of the groundwater at the site wells and of the surface water at locations at North Pond, South Pond, the wetlands area, and the Gunnison River occurs on an annual basis. Monitoring results will be included in an annual data validation report.

5.0 Recommendations

No maintenance items were identified during the inspection.

6.0 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	280	South Pond warning sign S5.
PL-2	5	Southwest corner of Building 12A; no evidence of disturbance.
PL-3	330	Southeast corner of Building 12A; no evidence of disturbance.
PL-4	185	Warning sign S12 near a wetland area at the north end of the site.
PL-5	140	Recent grading on the U.S. Army Reserve property.
PL-6	65	Outlet of new culvert at the edge of North Pond.
PL-7	200	Excavated structure on adjacent property east of the site.
PL-8	10	Private construction activities on adjacent property east of the site.

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GJO 2/2008. PL-1. South Pond warning sign S5.



GJO 2/2008. PL-2. Southwest corner of Building 12A; no evidence of disturbance.



GJO 2/2008. PL-3. Southeast corner of Building 12A; no evidence of disturbance.



GJO 2/2008. PL-4. Warning sign S12 near a wetland area at the north end of the site.



GJO 2/2008. PL-5. Recent grading on the U.S. Army Reserve property.



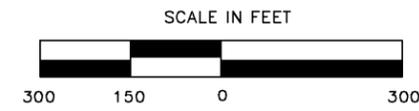
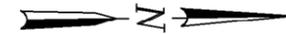
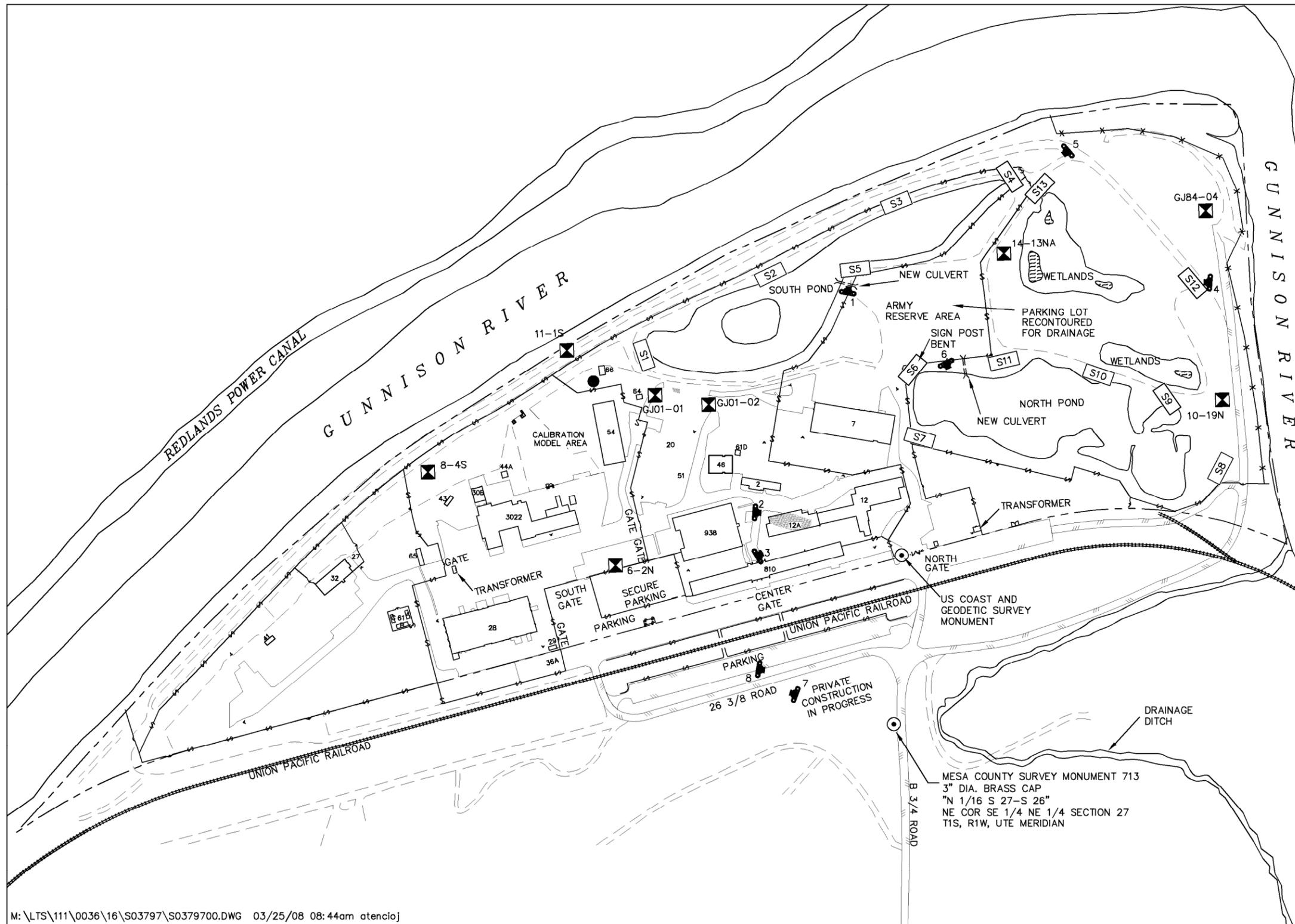
GJO 2/2008. PL-6. Outlet of new culvert at the edge of North Pond.



GJO 2/2008. PL-7. Excavated structure on adjacent property east of the site.



GJO 2/2008. PL-8. Private construction activities on adjacent property east of the site.



EXPLANATION

- S12 WARNING SIGN AND NUMBER
- SURVEY CONTROL MONUMENT
- DECOMMISSIONED BOREHOLE CONTAINING RADIUM FOIL
- 6-2N MONITOR WELL AND NUMBER
- 12 BUILDING AND NUMBER
- SUBSURFACE CONTAMINATION LEFT IN PLACE FOR DEFERRED REMEDIATION
- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- DIRT ROAD
- PAVED ROAD
- 1 PHOTO LOCATION, ROTATION, AND NUMBER

ANNUAL INSPECTION CONDUCTED
FEBRUARY 28 2008

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-07LM00060
2008 INSPECTION DRAWING GRAND JUNCTION SITE GRAND JUNCTION, COLORADO	
DATE PREPARED: MARCH 25, 2008	FILENAME: S0379700